THE BRITISH JOURNAL OF NUTRITION

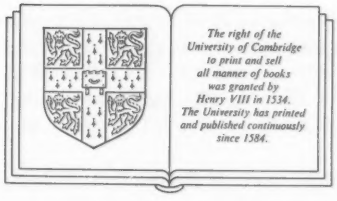
THE BRITISH JOURNAL OF NUTRITION

EDITED FOR THE NUTRITION SOCIETY

Editorial Board

C. J. BATES
D. E. BEEVER
K. N. BOORMAN
D. BROWN
D. O. CHANTER
J. K. CHESTERS
T. J. COLE
J. H. CUMMINGS
J. W. CZERKAWSKI
R. J. ELLIOTT
S. J. FAIRWEATHER-TAIT
M. F. FULLER
R. F. GRIMBLE
M. I. GURR
F. A. HARRISON
A. A. JACKSON
P. KELLY
G. E. LOBLEY
K. J. McCRACKEN
J. C. MATHERS
S. V. MORANT
J. D. OLDHAM
G. A. J. PITT
E. M. E. POSKITT
T. A. B. SANDERS
R. H. SMITH (*Chairman*)
M. G. TUCK
K. W. J. WAHLE
H. F. WALKER
T. E. C. WEEKES
E. F. WHEELER

VOLUME 59, 1988



CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE
NEW YORK NEW ROCHELLE MELBOURNE SYDNEY

Published by the Press Syndicate of the University of Cambridge
The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, NY 10022, USA
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Nutrition Society 1988

Printed in Great Britain by the University Press, Cambridge

CONTENTS OF VOLUME 59 1988

(*All rights reserved*)

SUD Sudha, SIDDHU Anupa, BIJLANI R.L. & KARMARKAR M.G. Nutrient composition is a poor determinant of the glycaemic response. 5

SHENNAN D.B. Selenium (selenate) transport by human placental brush border membrane vesicles. 13

TOPPING David L., OAKENFULL David, TRIMBLE Rodney P. & ILLMAN Richard J. A viscous fibre (methylcellulose) lowers blood glucose and plasma triacylglycerols and increases liver glycogen independently of volatile fatty acid production in the rat. 21

BACH Knudsen K.E., MUNCK L. & EGGUM B.O. Effects of cooking, pH and polyphenol level on carbohydrate composition and nutritional quality of a sorghum (*Sorghum bicolor* (L.) Moench) food, ugali. 31

SOUTHON Susan, JOHNSON I.T., GEE Jennifer M. & PRICE K.R. The effect of *Gypsophila* saponins in the diet on mineral status and plasma cholesterol concentrations in the rat. 49

HARVEY W. Keith & NAKAMOTO Tetsuo The influence of a high-protein, low-carbohydrate diet on bone development in the fetuses of rat dams with streptozotocin-induced diabetes. 57

GROVUM W.L. & CHAPMAN H.W. Factors affecting the voluntary intake of food by sheep. 4. The effect of additives representing the primary tastes on sham intakes by oesophageal-fistulated sheep. 63

MAXWELL M.H., WHITEHEAD C.C. & ARMSTRONG J. Haematological and tissue abnormalities in chicks caused by acute and subclinical folate deficiency. 73

DE JONG Felice A., HOWLETT Geoffrey J. & SCHREIBER Gerhard Messenger RNA levels of plasma proteins following fasting. 81

DĘBIEC Hanna & LORENC Roman Influence of lactose on phosphate metabolism in rats. 87

GRACE N.D., CAPLE I.W. & CARE A.D. Studies in sheep on the absorption of magnesium from a low molecular weight fraction of the reticulo-rumen contents. 93

JOHNSON R.J. & FARRELL D.J. The prediction of body composition in poultry by estimation in vivo of total body water with tritiated water and deuterium oxide. 109

ROWE J.B., NOLAN J.V., DE CHANEET G., TELENI E. & HOLMES P.H. The effect of haemonchosis and blood loss into the abomasum on digestion in sheep. 125

BALLARD R., BARDSLEY R.G. & BUTTERY P.J. Changes in the activity of skeletal muscle calcium-activated neutral proteinase (*EC* 3.4.22.17) and its specific inhibitor in chickens grown at different rates in response to graded levels of dietary protein. 141

VERMA P.C., GUPTA R.P., SADANA J.R. & GUPTA R.K. Paul Effect of experimental zinc deficiency and repletion on some immunological variables in guinea-pigs. 149

KRISHNAMURTI C.R. & JANSSENS S.M. Determination of leucine metabolism and protein turnover in sheep, using gas chromatography–mass spectrometry. 155

BUNKER Valda W., LAWSON Margaret S., STANSFIELD Maureen F. & CLAYTON Barbara E. Selenium balance studies in apparently healthy and housebound elderly people eating self-selected diets. 171

THOMAS Anita J., BUNKER Valda W., HINKS Leslie J., SODHA Nidish MULLEE Mark A. & CLAYTON Barbara E. Energy, protein, zinc and copper status of twenty-one elderly inpatients: analysed dietary intake and biochemical indices. 181

JACKSON M.J., GIUGLIANO R., GIUGLIANO L.G., OLIVEIRA E.F., SHRIMPTON R. & SWAINBANK I.G. Stable isotope metabolic studies of zinc nutrition in slum-dwelling lactating women in the Amazon valley. 193

EL GUINDI Mohamed, LYNCH Sean R. & COOK James D. Iron absorption from fortified flat breads. 205

BOSAEUS Ingvar, SANDSTRÖM Brittmarie & ANDERSSON Henrik Bile acid and cholesterol excretion in human beings given soya-bean- and meat-protein-based diets: a study in ileostomy subjects. 215

BROWN Nicola J., WORLDING Jane, RUMSEY R.D.E. & READ N.W. The effect of guar gum on the distribution of a radiolabelled meal in the gastrointestinal tract of the rat. 223

HERZBERG Gene R. & ROGERSON Maria Interaction of dietary carbohydrate and fat in the regulation of hepatic and extrahepatic lipogenesis in the rat. 233

LUTHRINGER Catherine, RAYSSIGUIER Yves, GUEUX Elyett & BERTHELOT Alain Effect of moderate magnesium deficiency on serum lipids, blood pressure and cardiovascular reactivity in normotensive rats. 243

FULLER N.J., EVANS P.H., HOWLETT M. & BATES C.J. The effects of dietary folate and zinc on the outcome of pregnancy and early growth in rats. 251

PEDERSEN Jens C. Comparison of γ-glutamyl hydrolase (conjugase; *EC* 3.4.22.12) and amylase treatment procedures in the microbiological assay for food folates. 261

CUNNANE Stephen C. Evidence that adverse effects of zinc deficiency on essential fatty acid composition in rats are independent of food intake. 273

BENDER David A. & OLUFUNWA Ronald Utilization of tryptophan, nicotinamide and nicotinic acid as precursors for nicotinamide nucleotide synthesis in isolated rat liver cells. 279

MASON J., LAMAND M., TRESSOL J.C. & MULRYAN G. Studies of the changes in systemic copper metabolism and excretion produced by the intravenous administration of trithiomolybdate in sheep. 289

MARAIS J.P., THERION Joha J., MACKIE R.I., KISTNER A. & DENNISON C. Effect of nitrate and its reduction products on the growth and activity of the rumen microbial population. 301

SOUTHON Susan, FAIRWEATHER-TAIT Susan J. & WILLIAMS Christine M. Fetal growth, glucose tolerance and plasma insulin concentration in rats given a marginal-zinc diet in the latter stages of pregnancy. 315

BERGEN W.G., BUSBOOM J.R. & MERKEL R.A. Leucine degradation in sheep. 323

SISSONS J.W., BELL F.R., GIRARD C.L. & WASS J.A.H. Nutrient sensitivity of gastric emptying of digesta in the preruminant calf. 335

JACKSON Dorothy A., IMONG Stella M., SILPRASERT A., RUCKPHAOPUNT S., WOOLRIDGE M.W., BAUM J.D. & AMATAYAKUL K. Circadian variation in fat concentration of breast-milk in a rural northern Thai population. 349

JACKSON Dorothy A., IMONG Stella M., SILPRASERT A., PREUNGLUMPOO S., LEELAPAT P., YOOTABOOTR Y., AMATAYAKUL K. & BAUM J.D. Estimation of 24 h breast-milk fat concentration and fat intake in rural northern Thailand. 365

MORGAN L.M., HAMPTON S.M., TREDGER J.A., CRAMB R. & MARKS V. Modifications of gastric inhibitory polypeptide (GIP) secretion in man by a high-fat diet. 373

POWERS Hilary J., WRIGHT A.J.A. & FAIRWEATHER-TAIT Susan J. The effect of riboflavin deficiency in rats on the absorption and distribution of iron. 381

SOUTHON Susan, WRIGHT A.J.A., PRICE K.R., FAIRWEATHER-TAIT S.J. & FENWICK G.R. The effect of three types of saponin on iron and zinc absorption from a single meal in the rat. 389

JEPSON M.M., BATES P.C. & MILLWARD D.J. The role of insulin and thyroid hormones in the regulation of muscle growth and protein turnover in response to dietary protein in the rat. 397

SONG Moon K., LEE David B.N. & ADHAM Nabeel F. Influence of prostaglandins on unidirectional zinc fluxes across the small intestine of the rat. 417

FFOULKES D. & LENG R.A. Dynamics of protozoa in the rumen of cattle. 429

SKEEF Noel S. & DUNCAN John R. A possible relation between dietary zinc and cAMP in the regulation of tumour cell proliferation in the rat. 437

BEN-AMOTZ A., MOKADY S. & AVRON M. The β-carotene-rich alga *Dunaliella bardawil* as a source of retinol in a rat diet. 443

SUBERVILLE C., HIGUERET P., TARUOURA D., GARCIN H. & HIGUERET D. Glutathione deficiency and peripheral metabolism of thyroid hormones during dietary cysteine deprivation in rats. 451

MACRAE J.C., SKENE Pat A., CONNELL Alexmary, BUCHAN Vivien & LOBLEY G.E. The action of the β-agonist clenbuterol on protein and energy metabolism in fattening wether lambs. 457

VAN DER MEER Roelof, DE VRIES Hielke T. & VAN TINTELEN Gerrit The phosphorylation state of casein and the species-dependency of its hypercholesterolaemic effect. 467

PAPET Isabelle, LEZEBOT Nadia, BARRE Francoise, ARNAL Maurice & HARPER Alfred E. Influence of dietary leucine content on the activities of branched-chain amino acid aminotransferase (*EC* 2.6.1.42) and branched-chain α-keto acid dehydrogenase (*EC* 1.2.4.4) complex in tissues of preruminant lambs. 475

BLAKEBOROUGH Peter & SALTER Dallyn N. Folate transport in enterocytes and brush-border-membrane vesicles isolated from the small intestine of the neonatal goat. 485

SALTER Dallyn N. & BLAKEBOROUGH Peter Influence of goat's-milk folate-binding protein on transport of 5-methyltetrahydrofolate in neonatal-goat small intestinal brush-border-membrane vesicles. 497

HIDIROGLOU M. & KARPINSKI K. Pharmacokinetic disposition in sheep of various vitamin E preparations given orally or intravenously. 509

ROBERTS Jennifer L., WHITTINGTON Frances M. & ENSER Michael Effects of litter size and subsequent gold-thioglucose-induced obesity on adipose tissue weight, distribution and cellularity in male and female mice: an age study. 519

SWANSON Joy E., BLACK J. Mark & KINSELLA John E. Dietary menhaden oil: effects on the rate and magnitude of modification of phospholipid fatty acid composition of mouse heart and brain. 535